

INTERACTIVE MEDIA GUIDE
WITH MEDIA GUIDANCE INTERFACE

This application claims the benefit of United States provisional application No. 60/195,946, filed April 10, 2000, United States Provisional Patent Application No. 60/202,306, filed May 5, 2000, which are incorporated by reference herein in their entirety.

Background of the Invention

Video and audio media, such as television programs, pay-per-view programs, near-video-on-demand (NVOD) programs, video-on-demand (VOD) programs, music, promotional material, and other types of media, may be distributed to viewers over wired and wireless networks. Suitable wired and wireless networks may include, for example, broadcast television system networks, one-way and two-way cable television system networks, digital broadcasting services (DBS) and other satellite delivery services networks, the Internet, and other suitable types of networks. Near video-on-demand (NVOD) and video-on-demand (VOD) systems have been

developed that allow television viewers to watch programs nearly on demand or on demand.

Viewers and listeners of such media typically record such media on videocassettes, audiocassettes, and other storage media. More recently, products have been developed that allow users to manage their viewing experiences and record media with increased flexibility. Personal video recorders (PVRs), such as those provided by TIVO and REPLAY, record programs on hard-disk drives. Users can schedule programs for recording and play them back at a later time. These systems also record what users are watching in real-time, allowing users to pause real-time programs when, for example, they must leave the room. Users may resume their viewing upon returning, where they left off, and may even fast forward through commercials until they reach the point at which the program is currently provided. Users may also rewind programs.

Recording capabilities of current technologies and the vast amount of media offered through current media distribution systems such as cable television systems, digital broadcasting services, the Internet, and other systems, provide users with an enormous amount of available media at any given point in time. When a user asks "what's on now", the answer can be any one of a number of different types of media from different sources. Improving the user interfaces of interactive media guides, such as television program guides, guides for audio services, guides for personal video recorders (PVRs), or any

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Summary of the Invention

5 This invention relates to interactive media guides and more particularly, to program guides that provide guidance for large amounts of media. Various features in accordance with some embodiments of the present invention are described, for example, in

10 Walker, et. al. Interactive Television Program Guide Systems with Integrated Program Listings, U.S. Patent Application serial number __/__, __, filed April 10, 2001, Thomas, et. al., U.S. provisional application serial number 60/195,946, filed April 10, 2000, and Tod

15 A. Walker, United States Provisional Patent Application No. 60/202,306, filed May 5, 2000 which are hereby incorporated by reference in their entirety.

The interactive media guide of the present invention may be used for any type of distributed media (e.g., television programs, VOD programs, NVOD programs, PPV programs, audio programs, etc.), delivered to a user in any suitable way (e.g., via cable, satellite, radio-frequency transmission, Internet, etc.), and for anything the user has recorded. The interactive media guide presents to the user "what's on now" in a user friendly way, by summarizing available distributed and stored media without using information related to the title, source, or content of the media (e.g., the criteria for

including media in a group may be arbitrary, user-defined, predefined, or any other suitable criteria). In some embodiments, the interactive media guide of the present invention may include an interactive television
5 program guide implemented using any suitable architecture.

In some embodiments, users are provided with an interactive media guide from which they may access related media. In some embodiments, media may be
10 grouped independent of their title sources, or content, but related in other ways that allow users to more easily search for desired media. For example, suitable groups may be Recent Favorites, Old Favorites, Recommendations, Browsing, Special Interest,
15 Categories, and Preview Scan. In some embodiments, groups may be further divided into sub-groups of media.

Groups and sub-groups may be user-configurable, or may be programmed into the interactive media guide. In some embodiments, groups and sub-
20 groups may be dynamically selected by the interactive media guide based on media that is available, thereby providing the user with dynamic guidance.

In some embodiments of the present invention, media may be grouped in source, title, or content
25 related ways. Media listings may be provided with the number of viewable selections (i.e., "hits") for the source, categories, or other groups. If desired, a combination of approaches may be used, in which the groupings that are not related to title, source, or
30 content may contain sub-groups that are related to

Figure 1 consists of 12 histograms arranged in a 6x2 grid, showing the distribution of the number of non-zero elements in the rows of the matrix A_k for $k = 0, 1, \dots, 11$. The x-axis for all plots is 'Number of non-zero elements' ranging from 0 to 10. The y-axis is 'Frequency' ranging from 0 to 10. The distributions are roughly bell-shaped and centered around 5-6 non-zero elements.

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Figure 1 consists of 12 histograms arranged in a single column. Each histogram represents the distribution of the number of non-zero elements in the vector x for a specific value of n . The x-axis for all histograms is labeled 'x' and ranges from 0 to 120. The y-axis is labeled 'count' and ranges from 0 to 100. The histograms are for $n = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120$. As n increases, the distribution of x becomes more concentrated around zero, with the peak count increasing significantly.

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media without indicating the content, title, or source of the media in accordance with an embodiment of the present invention.

FIG. 5c shows an illustrative display of an
5 interactive media guide displaying sub-groups in accordance with an embodiment of the present invention.

FIG. 6 shows an illustrative display of an interactive media guide displaying groups that may indicate media by indicating the content, title, or
10 source of the media in accordance with an embodiment of the present invention.

FIG. 7a shows an illustrative interface display of an interactive media guide displaying groups that indicate media without indicating the content,
15 title, or source of the media in accordance with an embodiment of the present invention.

FIG. 7b shows an illustrative display of an interactive media guide displaying media titles in accordance with an embodiment of the present invention.

FIG. 7c shows an illustrative display of an
20 interactive media guide displaying media titles in accordance with an embodiment of the present invention.

FIG. 8a shows an illustrative setup screen that allows a user to configure the groups displayed in
25 an interactive media guide in accordance with an embodiment of the present invention.

FIG. 8b shows an illustrative setup screen that allows a user to configure the groups displayed in an interactive media guide in accordance with an
30 embodiment of the present invention.

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FIG. 8c shows an illustrative display screen for entering a search query in accordance with an embodiment of the present invention.

FIG. 9a is a flowchart of illustrative steps involved in creating and displaying an interactive media guide in accordance with an embodiment of the present invention.

FIG. 9b is a flowchart of illustrative steps involved in configuring an interactive media guide according to a user's preferences in accordance with an embodiment of the present invention.

FIG. 9c is a flowchart of illustrative steps involved in configuring an interactive media guide according to a user's preferences in accordance with an embodiment of the present invention.

Detailed Description of the Invention

The interactive media guide of the present invention may be based on a number of different hardware platforms. Suitable hardware that may be used in implementing the program guide includes hardware such as satellite receivers, personal computer televisions (PC/TVS), personal computers (e.g., with television tuner cards), cable set-top boxes, or any other suitable hardware. In some embodiments, the interactive media guide may be an interactive television program guide. Illustrative interactive television program guide systems are described, for example, in Knee et al. U.S. patent 5,589,892 and Knudson et al. U.S. patent application Serial No.

In some embodiments, the interactive media guide may allow users to record programs on digital or analog storage devices (e.g., videocassettes, hard disks, floppy discs, flash memory, recordable compact discs (CDS), recordable digital versatile discs (DVDs), or any other type of storage). Interactive media guides having digital storage are described, for example, in Hassell et al. U.S. patent application Serial No. 09/157,256, filed September 17, 1998, which is hereby incorporated by reference herein in its entirety. Recording of media can also be performed by a program guide or other server. Client-server based program guides with remote server recording are described, for example, in Ellis et al. U.S. patent application Serial No. 09/332,244, filed June 11, 1999, which is hereby incorporated by reference herein in its entirety. On-line program guides may also record programs or direct a user's equipment to record programs.

An illustrative system 100 in accordance with the principles of the present invention is shown in FIG. 1. Main facility 120 provides program guide data from program guide data source 140 to interactive television program guide equipment 170 via communications link 180. There may be multiple program guide data sources but only one has been shown to avoid over-complicating the drawing. If desired, program guide data sources may be located at facilities separate from main facility 120, such as at local information services 150, and have their data provided to main facility 120 for localization and distribution. Program guide data sources 140 may be any suitable computer or computer based system for obtaining data (e.g., manually from an operator, electronically via a computer network or other connection, or via storage media) and converting the data into electronic form for distribution by main facility 120. Communications link 180 may be a satellite link, a telephone network link, a cable or fiber optic link, a microwave link, an Internet link, a combination of such links, or any other suitable communications link. Video signals may also be transmitted over communications link 180 if desired.

Local information service 150 may be any suitable facility for obtaining data particular to a localized region and providing the data to main facility 120 over communications link 410. Local information services 150 may be, for example, a local weather station that measures weather data, a local

newspaper that obtains local high school and college
sporting information, or any other suitable provider of
information. Local information services 150 may also
be a local business with a computer for providing main
5 facility 120 with, for example, local ski reports,
fishing conditions, menus, etc., or any other suitable
provider of information. Link 410 may be a satellite
link, a telephone network link, a cable or fiber optic
link, a microwave link, an Internet link, a combination
10 of such links, or any other suitable communications
link.

The program guide data transmitted by main
facility 120 to interactive television program guide
equipment 170 may include television programming data
15 (e.g., program identifiers, times, channels, titles,
program information, video-on-demand information,
promotional information and descriptions) and other
data for services other than television program
listings (e.g., help text, pay-per-view information,
20 weather information, sports information, music channel
information, associated Internet web links, associated
software, etc.). There are preferably numerous pieces
or installations of interactive television program
guide equipment 170, although only one is shown in
25 FIG. 1 to avoid over-complicating the drawing.

Program guide data may be transmitted by main
facility 120 to interactive television program guide
equipment 170 using any suitable approach. Data files
may, for example, be encapsulated as objects and
30 transmitted using a suitable Internet based addressing

5 facilities are described, for example, in Gollahon
et al. U.S. patent application Serial No. 09/332,624,
filed June 11, 1999, which is hereby incorporated by
reference herein in its entirety.

The interactive television program guide may be run completely on user television equipment 220 using the arrangements of FIGS. 2a and 2c, or may be run partially on user equipment 220 and partially on interactive television program guide equipment 210 using a suitable client-server or distributed processing arrangement such as those shown in FIGS. 2b and 2d. Program guide distribution facility 160 may be any suitable distribution facility (e.g., a cable system headend, a broadcast distribution facility, or any other suitable type of distribution facility, and may have distribution equipment 210).

Program guide distribution equipment 210 of
FIGS. 2a, 2b, 2c, and 2d may be equipment suitable for
providing program guide data to user television
equipment 220 over communications path 200. In
5 FIG. 2e, program guide distribution equipment 210 may
provide program guide data to Internet service
system 235 via, for example, a suitable computer
network or Internet link. Program guide distribution
equipment 210 may include, for example, suitable
10 transmission hardware for distributing program guide
data on a television channel sideband, in the vertical
blanking interval of a television channel, using an in-
band digital signal, using an out-of-band digital
signal, or by any other suitable data transmission
15 technique. Analog or digital video signals (e.g.,
television programs) may also be distributed by program
guide distribution equipment 210 to user television
equipment 220 over communications paths 200 on multiple
television channels. Alternatively, videos may be
20 distributed to user television equipment 220 from some
other suitable distribution facility, such as a cable
system headend, a broadcast distribution facility, a
satellite television distribution facility, or any
other suitable type of media distribution facility.
25 Communications path 200 may be any
communications path suitable for distributing program
guide data. Communications path 200 may include, for
example, a satellite link, a telephone network link, a
cable or fiber optic link, a microwave link, an
30 Internet link, a data-over-cable service interface

specification (DOCSIS) link, a combination of such links, or any other suitable communications link. Communications paths 200 preferably have sufficient bandwidth to allow program guide distribution

5 facility 160 or another distribution facility to distribute television programming to user television equipment 220. There are typically multiple pieces of user television equipment 220 and multiple associated communications paths 200, although only one piece of
10 user television equipment 220 and communications path 200 are shown in FIGS. 2a-2d to avoid over-complicating the drawings. If desired, television programming, other media, and program guide data may be provided over separate communications paths.

15 FIG. 2b shows an illustrative arrangement for interactive television program guide equipment 170 in a client-server based or distributed interactive media guide system. As shown in FIG. 2b, program guide distribution equipment 210 may include program guide
20 server 250. Program guide server 250 may use any suitable combination of hardware and software to provide a client-server based program guide. Program guide server 250 may, for example, run a suitable database engine (e.g., SQL Server by Microsoft) and
25 provide program guide data in response to queries generated by a program guide client implemented on user television equipment 220. If desired, program guide server 250 may be located at main facility 120, or other locations, such as a cable system headend, a
30 broadcast distribution facility, a satellite television

distribution facility, or any other suitable type of distribution facility.

The program guide may retrieve program guide data from program guide server 250 using any suitable client-server based approach. The program guide may, for example, pass SQL requests as messages to program guide server 250. In another suitable approach, the program guide may invoke remote procedures that reside on program guide server 250 using one or more remote procedure calls. Program guide server 250 may execute SQL statements for such invoked remote procedures. In still another suitable approach, client objects executed by the program guide may communicate with server objects executed by program guide server 250 using, for example, an object request broker (ORB). This may involve using, for example, Microsoft's Distributed Component Object Model (DCOM) approach, or the Common Object Request Broker Architecture (CORBA), Available from the Object Management Group.

The program guide implemented on interactive television program guide equipment 170 may communicate with program guide server 250 over communications path 200 using any suitable network and transport layer protocols, if desired. They may communicate, for example, using a protocol stack which includes Sequenced Packet Exchange/Internetwork Packet Exchange (SPX/IPX) layers, Transmission Control Protocol/Internet Protocol (TCP/IP) layers, Appletalk Transaction Protocol/Datagram Delivery Protocol

(ATP/DDP) layers, DOCSIS or any other suitable network and transport layer protocols.

FIGS. 2c and 2d show illustrative Internet based interactive television program guide systems.

5 Program guide distribution facility 160 may, for example, include Internet service system 610. Internet service system 610 may use any suitable combination of hardware and software capable of providing program guide data to the guide using an Internet based
10 approach (e.g., the HyperText Transfer Protocol (HTTP)). If desired, Internet service system 610 may be located at a facility that is separate from program guide distribution facility 160.

If the program guide is implemented on user television
15 equipment 220 of interactive television program guide equipment 170 as shown in FIG. 2c, Internet service system 610 (or other suitable equipment at program guide distribution facility 160 that is connected to Internet service system 610) may provide program guide
20 data to user television equipment 220 via the Internet, or via program guide distribution equipment 210 using any suitable Internet-based approach (e.g., using the HyperText Transfer Protocol (HTTP) over a Transmission Control Protocol/Internet Protocol (TCP/IP) type link).

25 If the program guide implemented on interactive television program guide equipment 170 is a client-server guide as shown in FIG. 2d, program guide server 250 may obtain program guide data from Internet service system 610. The program guide may also, however,

obtain program guide data from Internet service system 610 via an Internet connection.

In another suitable arrangement, program guide distribution equipment 210 may include computer equipment or other suitable hardware on which a first portion or version of the interactive television program guide is implemented. A second portion or version of the program guide may be implemented on user television equipment 220. The two versions or portions of the interactive media guide may communicate using any suitable peer-to-peer communications scheme (e.g., messaging, remote procedure calls, etc.) and perform interactive media guide functions distributively between program guide distribution facility 160 and user television equipment 220.

Another suitable arrangement in which an on-line program guide is implemented on interactive television program guide television equipment 170 is shown in FIG. 2e. On-line program guide systems are described, for example, in Boyer et al. U.S. patent application Serial No. 08/938,028, filed September 18, 1997, which is hereby incorporated by reference herein in its entirety. The user may have personal computer (PC) 231 on which a program guide client or web browser is implemented. Personal computer 231 may be connected to Internet service system 235 via Internet link 230. Internet service system 230 may use any suitable combination of computer hardware and software capable of providing an on-line program guide server application or web site. Internet service system 235

5 main facility 120, local information services 1500, or any other suitable source of program guide data.

digital video stream and data from program guide distribution facility 160 (FIG. 1), or some other suitable distribution facility, at input 260. During normal television viewing, a user tunes set-top box 280 to a desired television channel. The signal for that television channel is then provided at video output 300. The signal supplied at output 300 is typically either a radio-frequency (RF) signal on a predefined channel (e.g., channel 3 or 4), or an analog demodulated video signal, but may also be a digital signal provided to television 360 on an appropriate digital bus (e.g., a bus using the Institute of Electrical and Electronics Engineers (IEEE) 1394 standard, (not shown)). The video signal at video output 300 is received by optional secondary storage device 320.

30 connected to television 360, or on digital storage

device 310 if digital storage device 310 has suitable processing circuitry and memory. The interactive television program guide may also run cooperatively on a suitable combination of these devices. Interactive television application systems in which a cooperative interactive television program guide application runs on multiple devices are described, for example, in Ellis U.S. patent application Serial No. 09/186,598, filed November 5, 1998, which is hereby incorporated by reference herein in its entirety.

Secondary storage device 320 can be any suitable type of analog or digital program storage device or player (e.g., a videocassette recorder, a digital versatile disc recorder (DVD) recorder, etc.). Program recording and other features may be controlled by set-top box 280 using control path 340. If secondary storage device 320 is a videocassette recorder, for example, a typical control path 340 involves the use of an infrared transmitter coupled to the infrared receiver in the videocassette recorder that normally accepts commands from a remote control such as remote control 400. Remote control 400 may be used to control set-top box 280, secondary storage device 320, and television 360.

If desired, a user may record programs, program guide data, or a combination thereof in digital form on optional digital storage device 310. Digital storage device 310 may be a writeable optical storage device (such as a DVD recorder capable of handling recordable DVD discs), a magnetic storage device (such

as a disk drive or a digital tape drive), or any other digital storage device. Interactive television program guide systems that have digital storage devices are described, for example, in Hassell et al. U.S. patent application Serial No. 09/157,256, filed September 17, 1998, which is hereby incorporated by reference herein in its entirety.

Digital storage device 310 can be contained in set-top box 280 or it can be an external device connected to set-top box 280 via an output port and appropriate interface. If necessary, processing circuitry in set-top box 280 formats the received video, audio and data signals into a digital file format. Preferably, the file format is an open file format such as the Moving Picture Experts Group (MPEG) MPEG-2 standard or the Moving Joint Photographic Experts Group (MJPEG) standard. The resulting data is streamed to digital storage device 310 via an appropriate bus (e.g., a bus using the Institute Electrical and Electronics Engineers (IEEE) 1394 standard), and is stored on digital storage device 310. In another suitable approach, an MPEG-2 data stream or series of files may be received from program guide distribution equipment 210 and stored.

Television 360 receives video signals from secondary storage device 320 via communications path 380. The video signals on communications path 380 may either be generated by secondary storage device 320 when playing back a prerecorded storage medium (e.g., a videocassette or a recordable digital video disc), by

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the arrangement shown in FIGS. 2c and 2d.

Television 360 may also have such a suitable communications device if desired. In an alternative approach, user television equipment 220 may communicate
5 with Internet service system 610 via distribution equipment 210 using a suitable return path.

A more generalized embodiment of user television equipment 220 of FIG. 3 is shown in FIG. 4. As shown in FIG. 4, program guide data from program
10 guide distribution facility 160 (FIG. 1) is received by control circuitry 420 of user television equipment 220. The functions of control circuitry 420 may be provided using the set-top box arrangement of FIGS. 2a and 2b. Alternatively, these functions may be integrated into
15 an advanced television receiver, personal computer television (PC/TV), or any other suitable arrangement. If desired, a combination of such arrangements may be used.

User television equipment 220 may also have
20 secondary storage device 470 and digital storage device 490 for recording programming. Secondary storage device 470 can be any suitable type of analog or digital program storage device (e.g., a videocassette recorder, a digital versatile disc recorder (DVD),
25 etc.). Program recording and other features may be controlled by control circuitry 420. Digital storage device 490 may be, for example, a writeable optical storage device (such as a DVD recorder capable of handling recordable DVD discs), a magnetic storage

device (such as a disk drive or a digital tape drive), or any other digital storage device.

User television equipment 220 may also have memory 630. Memory 630 may be any memory or other
5 storage device, such as a random access memory (RAM), read only memory (ROM), flash memory, a hard disk drive, a combination of such devices, etc., that is suitable for storing program guide application instructions and program guide data for use by control
10 circuitry 420.

User television equipment 220 of FIG. 4 may also have communications device 511 for supporting communications between the program guide and distribution equipment 210, program guide server 250,
15 or Internet service system 610 via communications path 200. Communications device 511 may be a modem (e.g., any suitable analog or digital standard, cellular, or cable modem), network interface card (e.g., an Ethernet card, Token ring card, etc.), or
20 other suitable communications device (e.g., a modulator, a remodulator, or media may be transmitting within the vertical blanking interval (VBI) of an analog channel or within a data track or a digital channel.

25 A user may control the operation of user television equipment 220 with user input device 460. User input device 460 may be a pointing device, wireless remote control, keyboard, touch-pad, voice recognition system, or any other suitable user input
30 device. To access media, a user instructs processing

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circuitry 420 to display a desired television channel or other media source on display device 450. In another embodiment, it may also output audio data on audio output device 451. Display device 450 may be any
5 suitable television, monitor, or other suitable display device. Audio output device may be any suitable media speaker, or other suitable audio output device. To access the functions of the program guide, a user instructs the program guide implemented on interactive
10 television program guide equipment 170 to generate a main menu or other desired program guide display screen for display on display device 450.

FIG. 5a depicts an illustrative display template 500 of an interactive media guide according to
15 an embodiment of the present invention. Display template 500 includes groups 502, 504, 506, 508. In some embodiments, the groups may be designed to indicate media that the user may be interested in, without indicating the content (e.g., the criteria for
20 including media in a group may be arbitrary, user-defined, predefined, or any other suitable criteria), titles, or source of the media. One or more of the groups shown in FIG. 5a may be deleted if desired or other groups may be added if desired. Moreover, the
25 groups may be user configurable, or may be pre-defined.

FIG. 5b depicts an illustrative arrangement of the groups of FIG. 5a. The menu screen of FIG. 5b provides the user with opportunities to view "what's on now" for media within one or more groups. In the
30 embodiment in FIG. 5b, the groups are configured to

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relate to Recent Favorites 512, Old Favorites 514,
Recommendations 516, Browsing 518, Special
Interest 520, Categories 522, and Preview Scan 524.
These groups are meant only to be illustrative. Other
5 types of groups may be provided.

In response to a user selecting Recent
Favorites 512, the interactive media guide may indicate
to the user media available on demand that meet
criteria that meet favorites parameters set up by the
10 user, media with characteristics similar to the
characteristics of recently reviewed or recorded media,
or any suitable combination thereof. The interactive
media guide may also provide a list of media that a
user may select, which, upon selecting, the user may be
15 given the opportunity to view the media, buy the media,
set a reminder to view the media, or add attributes of
the media to a user profile, or perform any suitable
action with respect to the media. Recent favorites 512
may also indicate any recently recorded media, recently
20 recorded media that meets user favorites parameters, or
any suitable combination thereof. The recently
recorded media may have been recorded by the user's
home equipment or by a server remote to the user's
home. Any suitable combination of these approaches may
25 also be used.

In response to a user selecting Old
Favorites 514 from the main menu, the interactive media
guide may indicate to the user previously recorded
media that meets user favorites, media that have
30 characteristics similar to recently reviewed or

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recorded media, video on demand, or any suitable combination thereof. The interactive media guide may also provide a list of media that a user may select, which, upon selecting, the user may be given the
5 opportunity to view the media, buy the media, set a reminder to view the media, or add attributes of the media to a user profile, or perform any suitable action with respect to the media. Previously recorded media may have been recorded in accordance with the user's
10 desires (i.e., in response to the user indicating a desire that the user wants particular media or media with certain characteristics recorded). The media may be recorded on the user's home equipment or on a server remote to the user's home. In another suitable
15 approach, a server may record media automatically and provide old favorites available to the user for the user's review via the interactive media guide. Any suitable combination of these approaches may also be used.

20 In response to the user selecting Recommendations 516 from the main menu 510, the interactive media guide may indicate to the user recommended available media, previously recorded media, media on demand, or any suitable combination. The
25 media may be currently distributed or previously recorded. The interactive media guide may also provide a list of media that a user may select, which, upon selecting, the user may be given the opportunity to view the media, buy the media, set a reminder to view
30 the media, or add attributes of the media to a user

profile, or perform any suitable action with respect to
the media. A recommended media 516 may be recommended
to the user using any suitable approach. Programs may
be recommended based on, for example, user preferences
5 or favorites. Programs may also be editorially
recommended. The interactive media guide provider may,
for example, provide reviews or recommendations from
personnel at the service provider. Recommendations may
also be promotional or informational (e.g., sponsored
10 advertisements, infomercials, etc.).

In response to a user selecting Browsing 518
from the main menu, the interactive media guide may
provide the user with an opportunity to browse listings
for media that is currently available. The media may
15 be currently distributed media, or media that has been
prerecorded and is available to users on demand from
their in-home equipment or a remote server (e.g., guide
server, Internet server, etc.). The interactive media
guide may also provide a list of media that a user may
20 select, which, upon selecting, the user may be given
the opportunity to view the media, buy the media, set a
reminder to view the media, or add attributes of the
media to a user profile, or perform any suitable action
with respect to the media.

25 Listings may be browsed using any suitable
approach. Listings may, for example, be organized by
time, channel, genre, or any other suitable parameter.
If desired, the interactive media guide may provide
users with an opportunity to specify the
30 characteristics for which listings are presented. If

desired, one or more listing may be presented with a full or partial screen video of the currently selected (e.g., highlighted) listing. If desired, the video may be displayed along with media the user is currently
5 viewing. The video may be, for example, of the portion of the media currently available (i.e., the point at which it is currently distributed), a predefined portion of the media (e.g., the first twenty seconds), or a trailer or other clip that is supplied to the
10 interactive media guide. For audio media, a graphic associated with the audio may be displayed while an audio clip for the audio is played if desired.

In response to the user selecting Special Interest 520 from the main menu, the interactive media
15 guide may provide the user with an opportunity to review listings for media that are of special interest to the user. Media may be determined to be special interest media using any suitable approach. The interactive media guide may also provide a list of
20 media that a user may select, which, upon selecting, the user may be given the opportunity to view the media, buy the media, set a reminder to view the media, or add attributes of the media to a user profile, or perform any suitable action with respect to the media.
25 The interactive media guide may, for example, allow the user to select or define special interest categories. In another approach, the interactive media guide provider or the application may select special interest categories. The interactive media guide provider may,
30 for example, decide to feature particular types of

media in a given month. Any other suitable approach may also be used.

In response to the user selecting Categories 522 from the main menu, the interactive media guide may provide the user with an opportunity to select one or more categories of media for which the user wishes to access media listings. The interactive media guide may also provide a list of media that a user may select, which, upon selecting, the user may be given the opportunity to view the media, buy the media, set a reminder to view the media, or add attributes of the media to a user profile, or perform any suitable action with respect to the media. The categories may be user selected (e.g., from a setup screen), user defined, system selected, or defined or selected using any other suitable approach. In response to, for example, the user selecting a group from categories presented by the interactive media guide, the interactive media guide may provide the user with media listings for currently distributed or recorded media in the selected group or categories.

In response to the user selecting Preview Scan 524, the interactive media guide may provide the user with an opportunity to scan previews of currently available media. The interactive media guide may also provide a list of media that a user may select, which, upon selecting, the user may be given the opportunity to view the media, buy the media, set a reminder to view the media, or add attributes of the media to a user profile, or perform any suitable action with

respect to the media. Currently available media may include any media currently distributed to the user's equipment, or media previously recorded by the user's equipment or stored on a server remote to the user's home. Previews for the media may include video or audio clips associated with the media.

The video and audio clips may be provided to the interactive media guide using any suitable approach. Clips may be provided along with the media as, for example, digital files within the vertical blanking interval (VBI) of an analog channel or within a data track on a digital channel. Clips may be provided separately from the media to an interactive media guide running at least partially on the user's home equipment, using any suitable approach. Clips may be, for example, provided to the application on demand from a media source. Clips may be provided as, for example, part of data supplied to the interactive media guide, using a continuous stream, periodic download, periodic polling, or any other suitable approach. Previews may also be the current portion of currently distributed media, or a predefined portion of media, if desired. The preview clips may be presented to the user using any suitable approach. The interactive media guide may, for example, provide the user with an opportunity to select previews from media listings. In another suitable approach, previews may be provided using a passive scan. The interactive media guide may cycle through previews until the user indicates a desire to access media or exit the scan. The

interactive media guide may provide users with opportunities to skip a preview and access a subsequent preview, if desired.

Once a user selects a particular group (e.g., 5 512, 514, 516, 518, 520, 522, 524), the user may also be presented with a plurality of sub-groups. FIG. 5c depicts an interactive media guide in which category group 522 is expanded to display sub-groups sports 526, popular shows 528, premieres 530, and games 532. In 10 parentheses after each sub-group, the interactive media guide of FIG. 5c indicates how many media titles are available for the given sub-group. For example, there are five sports media titles available in the sports sub-group 526.

15 FIG. 6 depicts an illustrative What's On screen 600 that the interactive media guide may provide to the user to indicate currently available media with minimal information. The What's On screen of FIG. 6 may be used as a main menu screen, or in conjunction 20 with a main menu screen such as the main menu screen of FIG. 5b. For example, in response to a user selecting a menu selection from the menu of FIG. 5b, the interactive media guide may present the What's On screen of FIG. 6 to indicate the number of media 25 listings of media or available previews, in accordance with the selected menu selection.

The What's On screen 600 of FIG. 6 indicates to the user the number of available media selections for any suitable types and groupings of media, as 30 indicated in parenthesis. In the example of FIG. 6,

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three groups of available media selections indicated:
Source 602, Category 609, and Ratings 620. Source may
indicate available media by source, such as available
live media (e.g., programs) 604, media recorded by the
5 user 606, on-demand programs (e.g., video-on-demand or
audio-on-demand) 608, or any other suitable source
type. Category 609 may indicate available media for
any suitable category such as, for example, sports 612,
popular shows 614, premieres 616, or games 618.
10 Ratings 620 may indicate available media of different
editorial ratings, such as five-star 622, four-
star 624, three-star 626, two-star 628, or one-star
media 630.

Groups and sub-groups may be included in
15 screens using any suitable approach. Groups and sub-
groups may be user-configurable. Groups and sub-groups
may be programmed into the interactive media guide. In
still another suitable approach, groups and sub-groups
(and the menu selections of FIG. 5b if desired) may be
20 dynamically selected by the interactive media guide
based on what is available, thereby providing the user
with dynamic guidance.

FIG. 7a shows another illustrative display
arrangement for displaying groups that indicate media
25 without indicating the title, content (e.g., the
criteria for including media in a group may be
arbitrary, user-defined, predefined, or any other
suitable combination), or source of the media. Screen
700 may be displayed when a user first invokes the
30 program guide and may be generated in any suitable

manner. For example, screen 700 may be generated by the program guide from data downloaded from a remote site by any suitable means. Screen 700 may also be downloaded as an HTML document from a remote web server and displayed as a web page. Screen 700 may contain text, graphics, animations, video, any other suitable content, or any suitable combination thereof.

Screen 700 may contain picture-in-guide window 710 that contains media content 711 for the media currently being viewed (e.g., it may display media for the program on the channel to which the set-top box is currently tuned), media to be viewed in the future (e.g., a trailer for VOD media), or any other suitable media. Screen 700 may include interactive or passive advertisement window 720, which may display advertisement 721. Advertisement 720 may be any suitable passive or interactive graphic, text, video, or other advertisement for a program, product, or service. For example, a title or advertisement of a movie currently playing may be an advertisement. As another example, a third party may provide an interactive advertisement of a particular product. If a user desires additional information regarding the product, the user may indicate this desire by clicking or selecting the advertisement 720. Thereafter, the user may be provided with additional information regarding the advertised product. This additional information may be in any suitable form; it may be provided as a static or interactive advertisement, or, for example may be a web page associated with the

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advertised product. The menu 730 may be any of the
aforementioned interactive media guides; for example,
it may be any of the media guides shown in FIG. 5a-6.

In response to a user selecting a group or
5 sub-group, the interactive media guide may provide the
user with media listings in accordance with the user's
selection. Media listings may be provided by time, by
channel, or using any other suitable approach. For
example, FIG. 7b depicts another embodiment of menu 730
10 of FIG. 7a. FIG. 7b depicts media selections 742, 744,
and 746 that are available in the premiers sub-group.
In another embodiment, in response to a user selecting
a group or sub-group, menu 750 of FIG. 7c may be
displayed. Menu 750 may contain picture-in-guide
15 window 760 that contains media content 761 for the
media currently being viewed (e.g., it may display
media for the program on the channel to which the
set-top box is currently tuned), a preview of the media
that the user has selected, or any other suitable
20 media. For example, if the user has selected media
listing 754, a trailer or advertisement may be
displayed for that media listing in picture-in-guide
window 760. Menu 750 may also indicate interactive or
passive advertisements 763 in advertisement window 762.
25 Menu 750 may also display the selected group or sub-
group 752, and the media listings associated with that
group or sub-group, 754, 756, and 758. Media listings
754, 756, and 758 may be provided from a variety of
sources. For example, media listing 754 may be a
30 broadcast media listing. Media listing 756 may be a

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locally stored media listing, and media listing 758 may be a video on demand media listing. Upon selecting the desired media listing, the user may be given the opportunity to view the media, buy the media, set a
5 reminder to view the media, or add attributes of the media to a user profile, or perform any suitable actions with respect to the media. For example, the menu 750 may be replaced with a full screen display of the selected media.

10 In some embodiments, a user may personalize the groups according to the user's tastes. This may be accomplished in a variety of ways. A user may be provided with a plurality of groups to choose from, and may be given the opportunity to determine which sub-
15 groups, if any, should be displayed under the selected groups. For example, FIG. 8a depicts a setup screen that may allow a user to configure the groups according to the user's personal tastes. Setup display 800 may contain groups 810. A user may select which groups the
20 user would like to have displayed by, for example, selecting the appropriate check box from check boxes 815. The user may also select one or more sub-groups 820 which should be displayed under the selected group by, for example, checking the appropriate check
25 box from the check box grid 825 under the appropriate sub-group. The sub-groups 820 may be predefined, or the user may be given the opportunity to enter text into the category subgroups fields 820 to be displayed.

In some embodiments, users may be given the
30 opportunity to dynamically create the media guide menu

screen. In FIG. 8b, a user may be given the opportunity to enter one or more searches 830 defined by the user and saved by the interactive media guide. The user may also select one or more groups 850 under which the results of the selected searches may be displayed. Upon indicating a desire to enter a search by selecting an appropriate check box 835, a user may be given an opportunity to name the search string (e.g., "Rich's Favorites"). The user may also be given the opportunity to enter a search string. The search string may be a boolean search string, natural language search string or any other suitable search string. FIG. 8c illustrates an example display 855 that may be presented to the user, when the user indicates a desire to enter a search string. The user may enter a search string in query box 858. To further refine the search, the user may select one or more search criteria 860 to apply the search to. These criteria may include, for example, program time, the program subject, or key word search. Thereafter, upon entering the menu screen, the guide will perform the search entered by the user, and will display only those user-defined groups 850 that contain programs that meet the search criteria. A user may also be given the opportunity to determine when the search should be performed, by selecting the appropriate check box from search criteria field 870. For example, a user may select to have the search executed immediately, at a scheduled time (e.g., at 9:00 am, or every hour), or at the occurrence of a specified event (e.g., whenever a group or sub-group is

selected, the ending of a specified program, or any other suitable event).

FIG. 9a is a flowchart of illustrative steps involved in creating and displaying an interactive media guide according to an embodiment of the present invention. In step 900, indicators are provided in the main menu by providing indicators of groups of media that are available to the user are provided. The groups may, for example, indicate media without indicating the title, source or content (e.g., the criteria for including media in a group may be arbitrary, user-defined, pre-defined, or any other suitable criteria) of media. Illustrative groups include, for example, recent favorites, old favorites, recommendations, browsing, special interest, categories, preview scan, or any other suitable category. In step 902, the user indication of a desired media group may be received by, for example, interactive television program guide equipment 170 of FIG. 1 (e.g., groups 512, 514, 516, 518, 520, 522, or 524 of FIG. 5b). The user may then be provided with an indication of available media, in step 908. In one embodiment (not shown), the user may be provided with an indication of available media listings displayed by time, and, in the same list, media that includes media that are scheduled by time media that are available but are without a scheduled time. In another embodiment, the user may be provided with indicators of available sub-groups, in step 904 (e.g., sub-groups 526, 528, 530, 532 of FIG. 5c). The user indication of a desired

media sub-group may be received in step 906. In step 908, the user may then be provided with indicators of available media.

Upon being presented with indicators of
5 available media, the user indication of desired media may be received in step 910. In response to this indication, a user may be given the opportunity to perform a suitable action on the media, in step 912. The user may be given the opportunity to view the
10 media, buy the media, set a reminder to view the media, or add attributes of the media to a user profile, or perform any suitable actions with respect to the media. In one example, the current displayed screen may be replaced with a full-screen display of the selected
15 media or content.

FIG. 9b is a flowchart of illustrative steps involved in configuring a menu screen according to a user's preferences. In step 914, the user may be provided with indicators of available groups of media
20 (e.g., the user may be presented with the media groups 810 of FIG. 8a). In step 916, the user may be provided with indicators of sub-groups, e.g., the sub-groups 820 of FIG. 8a. These sub-groups may be predefined, or the user may be given an opportunity to
25 enter the user's own sub-groups. In step 918, the user indication of groups to be displayed for inclusion in the main menu may be received by, for example, interactive television guide equipment 170 of FIG. 1 (e.g., by selecting one or more check boxes from check
30 boxes 815 of FIG. 8a). In step 920, the user

indication of sub-groups to be displayed under the selected groups may be received (e.g., by selecting the appropriate check boxes from check box grid 825). In step 922, it may be determined how many media titles
5 are available that are associated with the selected groups and sub-groups. In step 924, the user-defined menu screen may be displayed, including the indicated group, sub-groups, and the number of available media titles associated with those groups and sub-groups.

10 FIG. 9c is a flowchart of illustrative steps involved in configuring a menu screen according to a user's preferences. In step 926, the user may be provided with indicators of available user-defined search queries (e.g., the search queries 830 of
15 FIG. 8b). In step 928, the user may be provided with indicators of available groups, e.g., the groups 850 of FIG. 8b. In step 930, the user's indication to enter a query may be received by, for example, interactive television guide equipment 170 of FIG. 1 (e.g., by
20 selecting one or more check boxes from check boxes 835 of FIG. 8b). Queries may be scheduled to run periodically (e.g., every hour), upon the occurrence of an event (e.g., if a program ends) or on demand. Upon indicating a desire to enter a query, the user may be
25 given the opportunity to name the search query (e.g., "sports", or "Rich's Favorites"), and to enter a search string that will be associated with the named search query is step 932 (e.g., FIG. 8c).

In step 934, the user's indication of which
30 groups the results of the queries should be displayed

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TOP10 9999999

[illegible]

Thus, systems and methods for providing
10 guidance to users for finding media provided by
different media sources is provided. One skilled in
the art will appreciate that the present invention can
be practiced by other than the described embodiments,
which are presented for illustration and not of
15 limitation, and the present invention is limited only
by the claims that follow.